

## FRACKING IN USA - 1.600 BILLIONS IN FAVOR OF THEIR TRADE DEFICIT

### GELA performs an analysis of what reduced imports and increased exports of oil and gas since the beginning of fracking and what this represents for the US trade balance

The United States was, is and will continue to be an economic world power, fundamentally due to the continuous technological innovation that it generates and the thriving marketing that practices to introduce these products and services into the market. The mobile phone, the car, the internet and thousands of other technological advances that humanity has adopted immediately, come from the USA.

Fracking technology, used to produce shale gas and shale/tight oil, is another technological breakthrough in the U.S., to economically extract hydrocarbons from an impermeable rock formations, by fracturing them with high pressure water and steered horizontal drilling.

This technological breakthrough has changed the profile of the hydrocarbon industry worldwide and the US economy in particular. It has helped to greatly improve its trade deficit, given it was headed to import the a great chunk of its oil and natural gas needs in the future .



## REPORT NON-CONVENTIONAL RESERVOIRS

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- ✓ includes three (3) issues:
- ✓ Monitoring and analysis of natural gas production
- ✓ Monitoring and analysis of well drilling
- ✓ Monitoring and analysis of well productivity

### IMPORTANT INFORMATION FOR

Operating companies  
Services companies  
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Electrical and industrial end users  
The entire value chain in the region and in the world energy sector.

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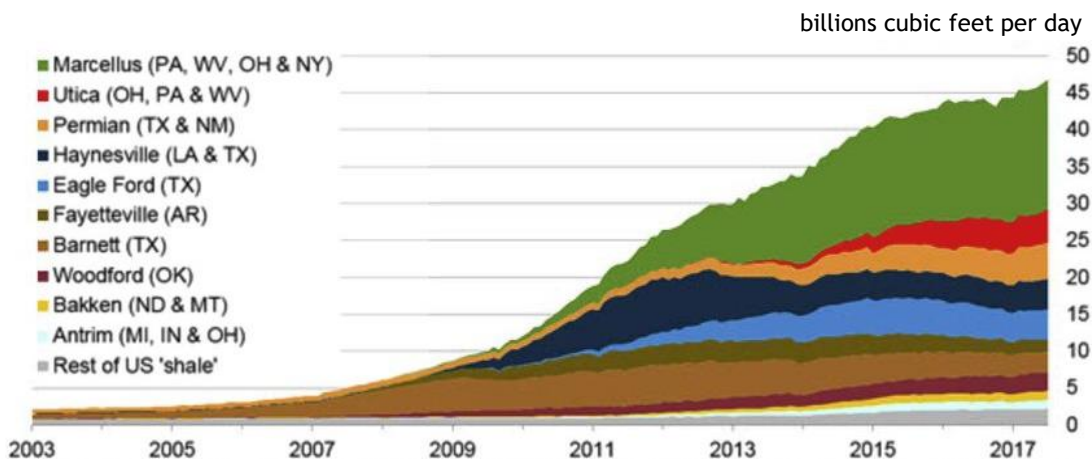
Studies indicate that the US has 19% of the world's total shale / tight oil resources and 8% of the world's shale gas. It is the only country that has achieved massive and economic production so far. Shale gas competitive production becomes a reality back in 2001 and oil around 2005/2006.

### Countries with technically recoverable shale/tight oil and shale gas

Rank	Country	Shale/tight oil (billions barrels)	Rank	País	Shale gas (trillions cubic feet)
1	United States	78	1	China	1.115
2	Russia	75	2	Argentina	802
3	China	32	3	Algeria	707
4	Argentina	27	4	United States	623
5	Libya	26	5	Canada	573
6	United Arab Emirates	23	6	México	545
7	Australia	16	7	Australia	429
8	Chad	16	8	South Africa	390
9	Venezuela	13	9	Russia	285
10	México	13	10	Brazil	245
	Rest of the world	100		Rest of the world	1.864
<b>Total</b>	<b>World</b>	<b>419</b>	<b>Total</b>	<b>World</b>	<b>7.577</b>

Source: EIA, World Shale Resource Assessments. September 2015

### U.S dry shale gas production



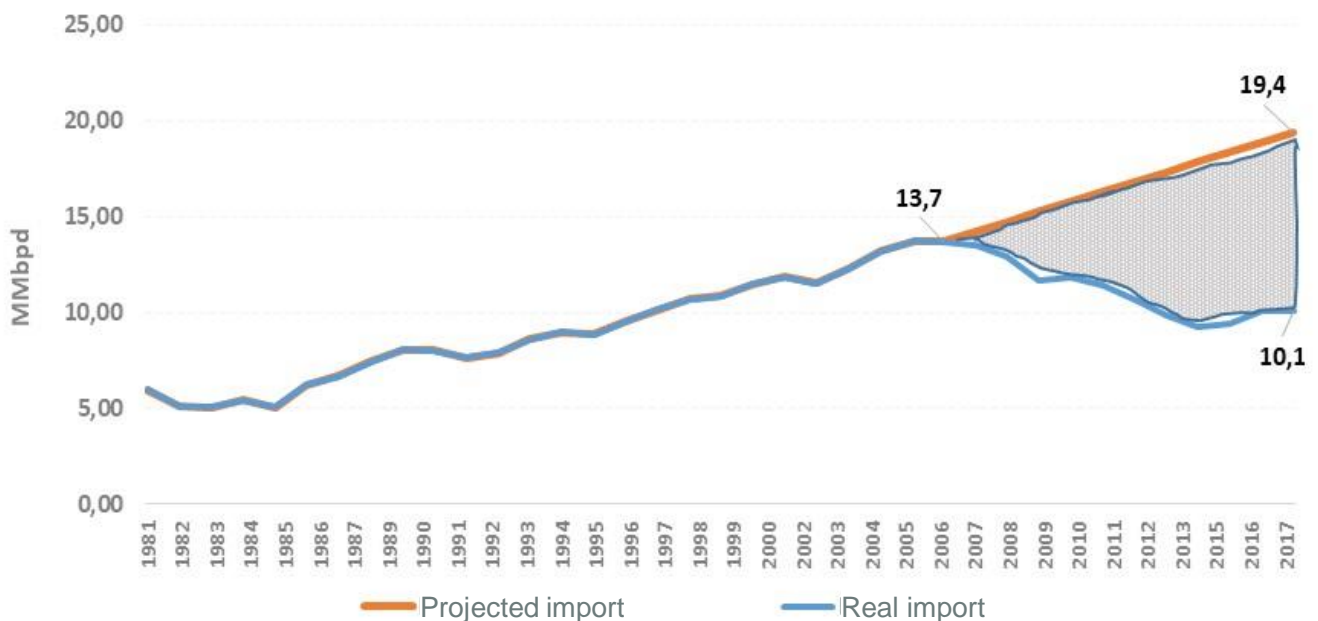
Source: EIA derived from state administrative data collected by DrillingInfo Inc. Data are through July 2017 and represent EIA's official tight gas estimates, but are not survey data.

## U.S. balance for Oil

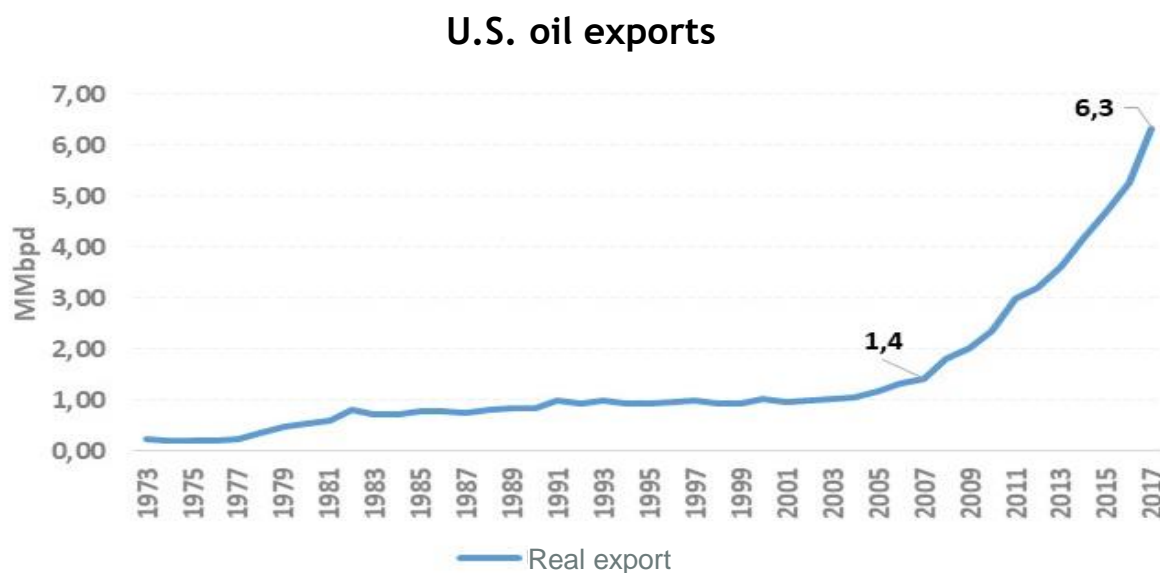
Oil imports (1985) were close to 5 Million barrels per day (MMBbld) and rose in 2006 to 14 MMBbld with an annual growth of 8%, when fracking breaks through. Without fracking, imports would have been approximately 19 MMBbld in 2017, but were reduced to 10 MMBbld. This saving in imports, at an average real price of 75.2 USD / barrel (WTI), results in approximately 976 Billion dollars (976,000,000,000 USD)

If we add the incremental oil exports due to fracking introduction, which have been carried out between 2007 and 2017 (annual growth of 16%), 376 Billion dollars were generated. Oil positive balance in favor of the trade deficit by reduced imports and incremental exports results in 1,352 Billion dollars during the study period. The analysis performed is graphically shown in the graphs below.

### U.S. oil imports



## U.S. balance for oil



Source: EIA, Data to 2017. Own elaboration

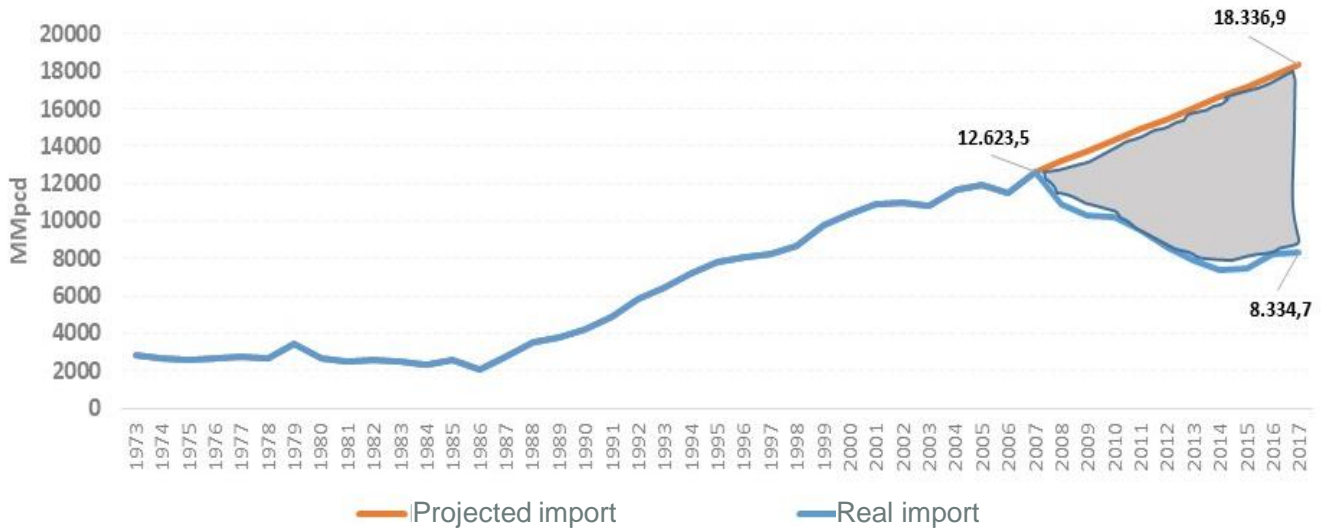
## U.S. balance for natural gas

The same analysis is possible for natural gas from the drastic reduction in imports as of 2007. The average annual import growth from 1986 to 2007 was 24% per year. The saving for unrealized imports of natural gas in the period 2007 to 2017 was therefore 115.7 Billion dollars. All this at a real average of 7 USD / MMBTU (NBP marker is used).

New and growing exports of natural gas begin to take off slowly from 2002 to Mexico and Canada by pipeline and on a larger scale by LNG to the world around 2014/2015. Additional exports of natural gas, at a real average price of 5.5 USD / MMBtu (average NBP marker in Europe and Henry Hub of the USA) generated approximately 89.5 Billion dollars. The reduction of imports and new exports of natural gas, thus totals around 205.3 Trillion dollars in the period studied and as shown in the graphs below.

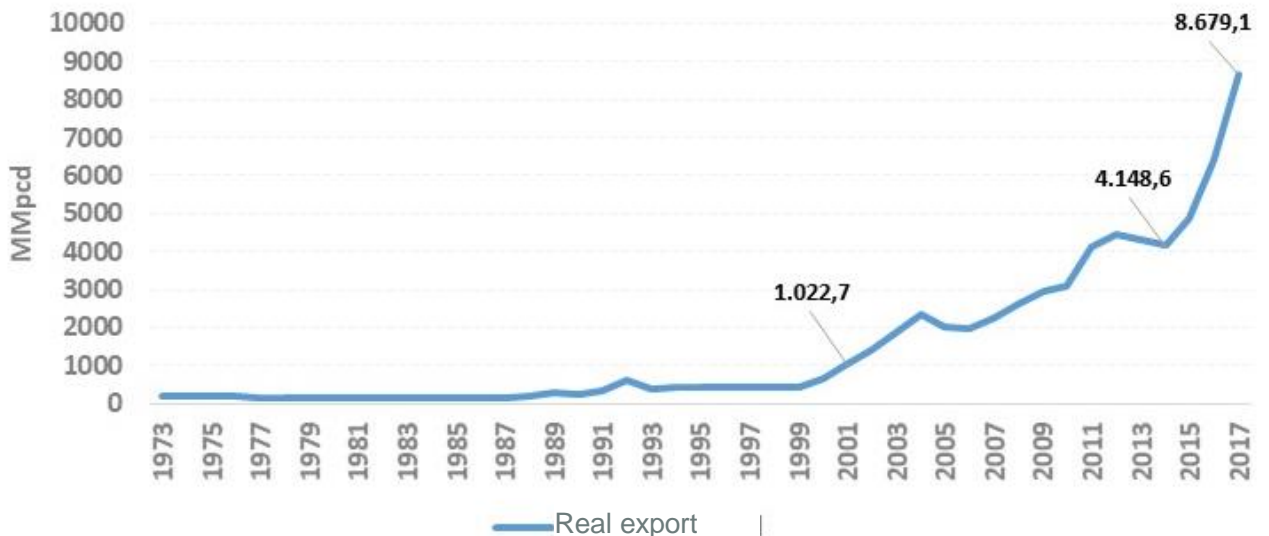
## U.S. balance for natural gas

### U.S. Import of natural gas



Source: EIA, Data to 2017. Own elaboration

### U.S. Export of natural gas



Source: EIA, Data to 2017. Own elaboration

## Conclusions

In summary we can conclude and state that the trade balance in favor of the U.S. has been, in total, of approximately 1,557.3 Billion dollars in these 16 years due to the development of fracking.

And this is just beginning. Oil and particularly natural gas production will continue to increase in the years to come, and further strengthening the economy, reducing the fiscal deficit and of course empowering President Trump.

It is worth mentioning that this basic analysis of the trade balance does not take into account the significant generation of technological employment and labor that has been generated by fracking activity. Nor the royalties paid by thousands of experimental and ingenious producers (who have experienced how to break the rock more and more efficiently) to the owners of the resource in the subsoil, which are not other than the American citizens. Neither does it consider the booming petrochemical industry that has developed and much more to improve the economy.

In order to conclude and compare, in our region, it is almost impossible for Argentina to lift massive natural gas economic production from the super abundant and neat shale gas in Vaca Muerta. Needless to say the debacle of the oil and gas industry in Venezuela and in other countries in Latin America as well.



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